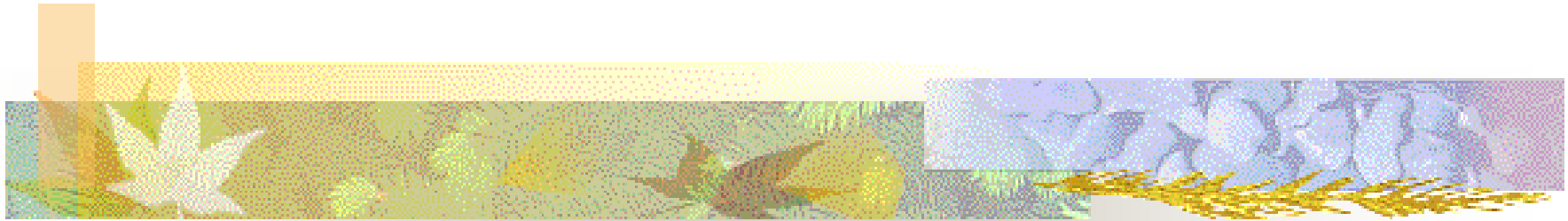


# What Does Spelling Have to Do with Reading Comprehension?



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# Spelling is Linked to Reading

- Houston-D.C. study (Foorman, Moats, Fletcher, Francis)
- 17 schools, 1200 students followed from K-4<sup>th</sup> grade
- By grade 4, children who were reading at the 45<sup>th</sup> %ile were spelling at the 20<sup>th</sup> %ile
- Very little time was spent teaching spelling (4%)
- Nevertheless, the correlation between passage comprehension and spelling was .7 to .73 in grades 1-4

-- Mehta et al., 2005, Scientific Studies of Reading

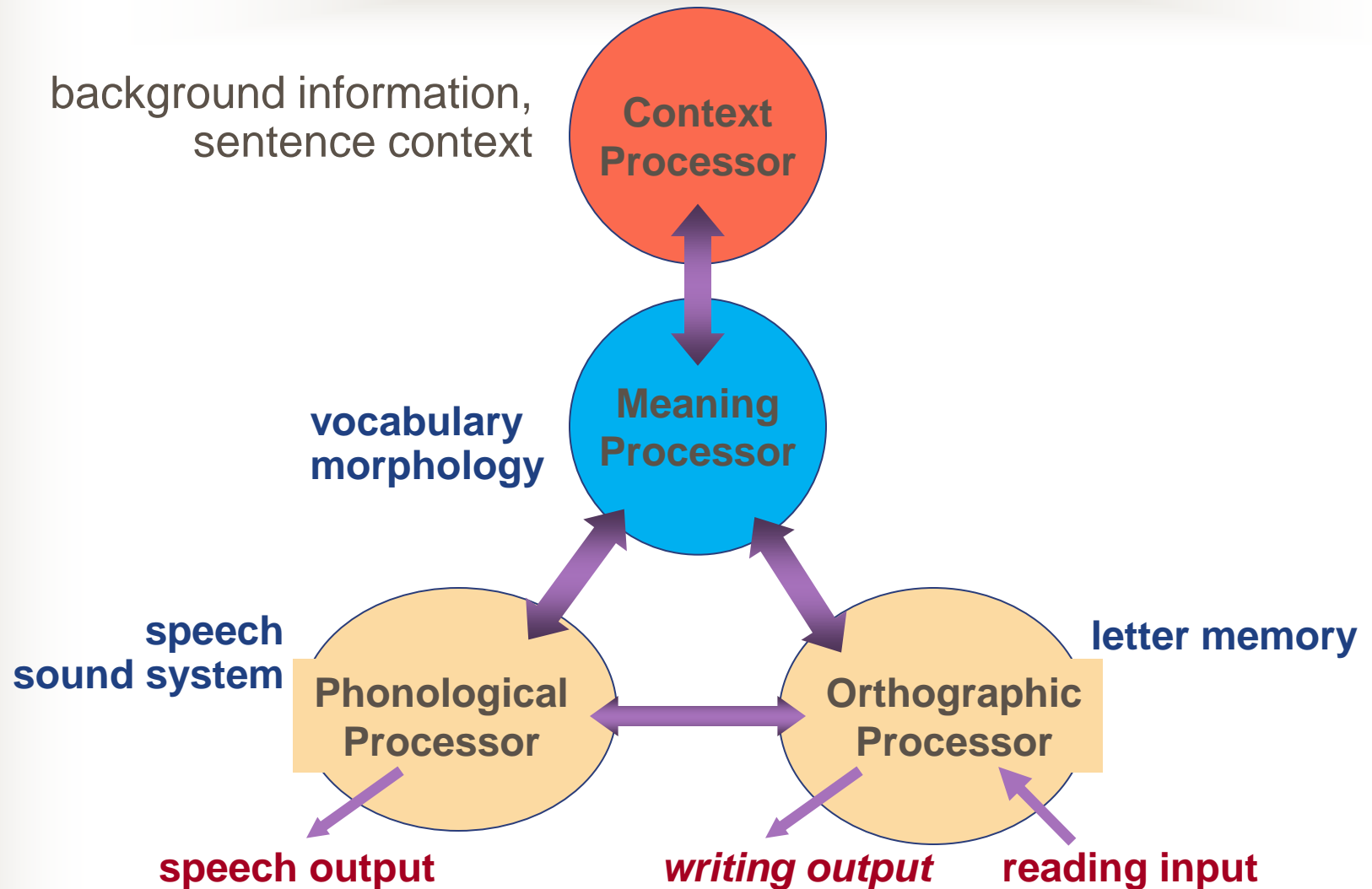


# Both Depend on Linguistic Skill

- Reading and spelling development depend on phonological awareness and morphological awareness

(Read, 1971; Chomsky, 1979; Post et al., 1999; Ehri, 1994; Tangel and Blachman, 1995; Sawyer et al., 1999; Cassar, Treiman, et al. 2005 )

# Four Processing Systems






# It's Not Rote “Visual Memory”

Methods that emphasize language structure are more effective than rote methods (Graham, 1999; Berninger, 1999)

Joshi, Treiman, Carreker, & Moats (2009) *American Educator*)

- 
- Spelling requires a *fully specified memory* for a word
  - Memories are established by *looking closely, thinking* about the details in words, *understanding* word structure, and developing *motor habits* for writing.



# New Understandings Since 1970

1. How English orthography is structured
2. How spelling develops
3. Why spelling is a language skill
4. What's causing spelling disability
5. What instructional approaches work the best





# *Encoding* Has a Powerful Effect on Reading Growth

Beverly Weiser's meta-analysis (SMU):

- The mean effect size for the impact of encoding instruction on knowledge of the alphabetic principle was .84 (large!)
- The mean effect size for supplemental reading interventions using encoding instruction was .84 (large!)





# What is Encoding?

- ...the act of systematically constructing phoneme-grapheme correspondences to produce words in writing or with manipulatives (grapheme tiles or cards)
- ...spelling with phoneme-grapheme units, or phoneme-grapheme mapping



# Graphemes

- A letter or letter pattern that spells a phoneme (speech sound).
- Graphemes can be one, two, three, or four letters in English!
  - 1 letter: 'a' as in strap
  - 2 letters: 'ng' as in ring
  - 3 letters: 'tch' as in ditch
  - 4 letters: 'ough' as in through



# A Pattern-Based Orthography

a	ai	ay	eigh
a-ble sta-dium ma-tron ta-per na-tion	trail maid waif stair waist	may maybe clay stray playground	eight weigh weight neighbor sleigh



# A Morphophonological System

- Morphemes are the smallest meaningful parts of words (prefixes, roots, base words, suffixes, parts of compounds, inflections)

speculation      inspector      respect

- English orthography preserves meaning in its spellings

cite, citation

site, situated

sight, hindsight

press, pressure



# Spelling Represents Language of Origin

- apostrophe, chlorophyll (Greek)
- addiction, pronominal, illuminate (Latin)
- playground, backward, knighthood (Anglo-Saxon)
- mesa, canyon (Spanish)
- piano forte, cello (Italian)
- chagrin, coupon, antique, baguette (French)



# Spelling Lesson Routines

- Phonemic awareness
- Study of grapheme patterns, syllables, morphemes
- Practice: word sorts, word building
- Dictation of words and sentences
- Speed Drills and Proofreading
- Application to writing!





# Begin with Phoneme Awareness

Directly teach:

- phoneme identification
- phoneme segmentation
- link to phoneme-grapheme correspondence

A B C D E F G H I J  
K L M N O P Q R S T U V

W X Y  
Z

1 2 3 4 5 6 7 8 9 0

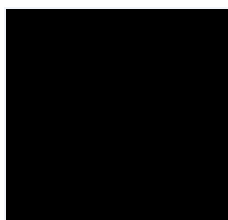
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[ \ ] ^ \_ ` { | } ~

# Identify the Phonemes: “block”

--	--	--	--	--



/b/



/l/

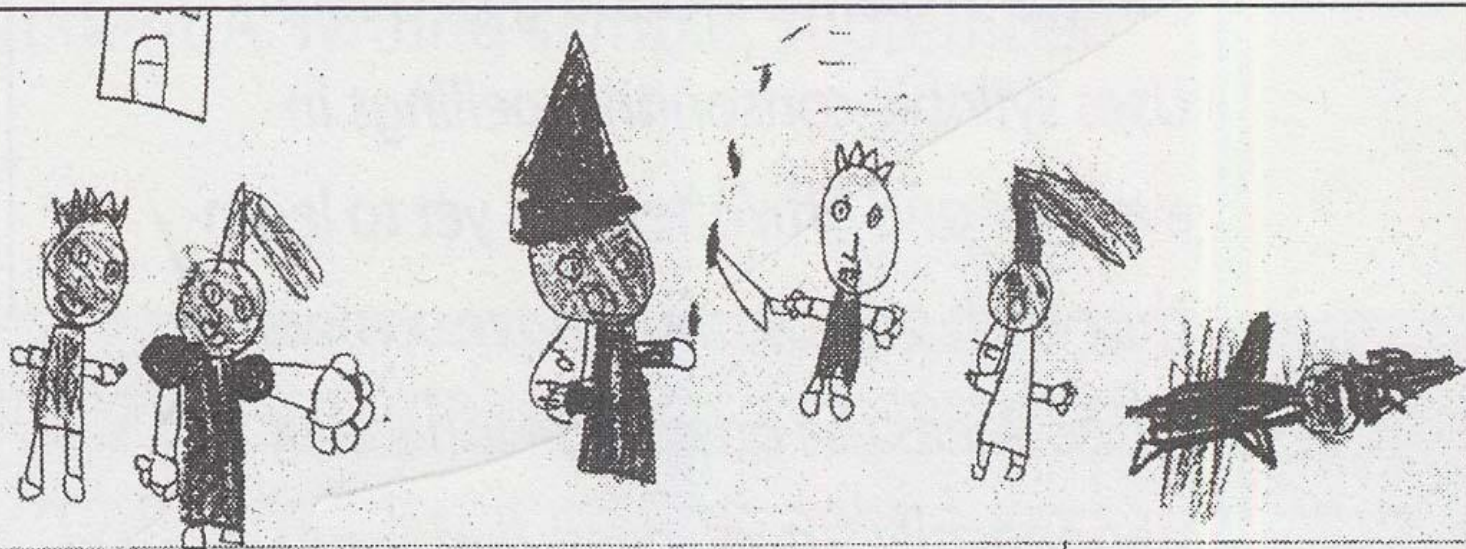


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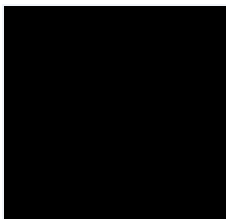
/k/





Once upon a time there  
was a princess she was loka  
in the hrist kasl the witch  
kam to kil hr  
but she did not but The prince

# Map Phonemes to Graphemes: “splash”



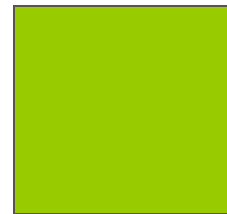
**s**



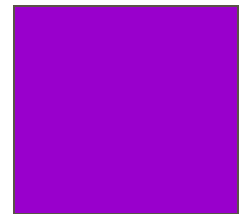
**p**




**l**



**a**



**sh**



# Map the Graphemes to the Phoneme Boxes

**stuff  
smelled  
thank  
liquid  
next**

**thrilled  
quacked  
strong  
brushes  
sixth**



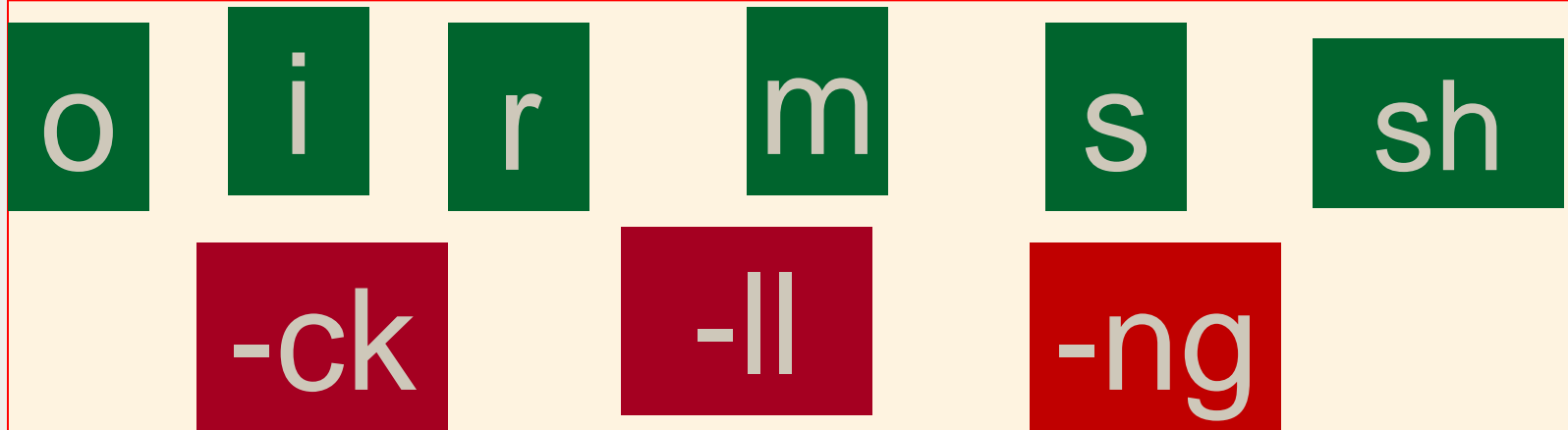


# Phoneme-Grapheme Mapping




# Phoneme-Grapheme Mapping


# Effective Instruction: Spelling with Grapheme Tiles



- a) Say a word; students build the word.
- b) Students make as many words as they can, working in teams.



# Sort Word by Patterns

oa	ow	(o_e)
toad toasted throat coast coach soaked floating	flowed elbow yellow throw snowed owner window growth	stone throne broke quote



# Link Meaning to Spelling

- A \_\_\_\_\_ is an animal that looks like a frog but lives on land.
- You're \_\_\_\_\_ when you are on top of the water and don't sink.
- To \_\_\_\_\_ means to “toss something in the air.”



# Proofread

- the yelow towd croakt when it saw its shadoaw
- We went to the koast to flote and soke in the soapy sea suds
- Our coch told us we showd growth in throing balls





## Use in Context

High-low, the giraffe, lived in a tree house on the coast of the sea. She liked to look out the window and watch the boats.

One day she saw a yellow box floating by. It had big letters on it that spelled “soap.” She got soaked when she swam out to get it.

# Teach morphology...

“It mad us have ideys and pusht us to finich...”

(Inventive spelling doesn't work!)





# Two Types of Suffixes

## inflections:

- learned early
- do not change a word's part of speech
- a fixed set or class of words
- change tense, number, and degree (*-ed*, *-s*, *-er*)

## derivations:

- added to a root (usually from Latin)
- mark part of speech or grammatical role (*compare*, *comparison*, *comparative*, *comparatively*)



# Past Tense Inflections

	/d/	/t/	/əd/	New Syllable ?
moved				
wowed				
stalked				
hissed				
shifted				
mended				

# A Derivational Suffix Determines A Word's Part of Speech

## Noun Suffix Examples

- ment (contentment)
- tion (injection)
- ity (levity)

## Verb Suffix Examples

- ate (suffocate)
- ize (randomize)
- fy (satisfy)

## Adjective Suffix Examples

- ous (infectious)
- al (natural)
- ive (persuasive)
- ic (genetic)
- y (squishy)

## Adverb Suffix Examples

- ly (hesitatingly)



## End It with –y or –ly

- |            |          |
|------------|----------|
| ■ lone     | ■ fantas |
| ■ happ     | ■ dream  |
| ■ rude     | ■ kind   |
| ■ neighbor | ■ great  |
| ■ shadow   | ■ clean  |
| ■ weak     | ■ snow   |
| ■ soap     | ■ eight  |





# Dictation

- Say a sentence slowly, in phrases.
- Students repeat.
- Students make a line for each word they will write.
- Students allowed to ask “good questions.”
- After writing, students look at a model and self-correct.



# What Kind of Instruction?

- Systematic
- Explicit
- Sequential and cumulative
- Conceptualization to application in context
- Multisensory and manipulative



# Spelling Assessment

1. Normative comparison (standard score, percentile rank)
  - Test of Written Spelling
  - Woodcock-Johnson Achievement Test
  - Wechsler Individual Achievement Test
2. Diagnostic survey of regular spelling patterns to be taught
3. Spelling error analysis

1	Fan	
2	Pet	
3	dig	
4	mob	
5	rope	
6	Waite	wait
7	chunk	
8	Sed	sled
9	stik	stick
10	Shine	shine
11	drem	dream
12	blad	blade
13	cowch	coach
14	frit	fright
15	Shaing	
16	tokt	talked
17	Camping	
18	thorn	
19	shawted	shouted
20	spowed	spoil
21	growl	
22	cerp	chirp
23	Clapped	
24	trp	tries
25	hiking	



Name of Child \_\_\_\_\_

Teacher

Grade 3Date 2-5

         Total Pts

	Initial Consonant	Final Consonant	Di-graph	Blend	Short Vowel	Long Vowel VC e	Vowel Team/diphthong	R-control Vowel	Inflections	Correct	Word Totals
1. fan	f	n			a					✓	3
2. pet	p	t			e					✓	3
3. dig	d	g			i					✓	3
4. mob	m	b			o					✓	3
5. rope	r	p				o-e				✓	3
6. wait	w	t					ai				2
7. chunk			ch	nk	u					✓	3
8. sled				sl	e						1
9. stick		-ck		st	i						2
10. shine			sh			i-e					0
11. dream				dr			ea				1
12. blade				bl		a-e					1
13. coach			-ch				oa				1
14. fright				fr			igh				1
15. snowing				sn			ow		-ing	✓	3
16. talked							-al		-ed		0
17. camping				-mp					-ing	✓	2
18. thorn			th					or		✓	2
19. shouted			sh				ou				1
20. spoil				sp			oi				1
21. growl				gr			ow			✓	2
22. chirp			ch					ir			0
23. clapped				cl					-pped	✓	2
24. tries				tr					-es		1
25. hiking									-king	✓	1

Feature Totals:

6/6

6/7

4/6

11/12

 $\frac{7}{7}$  $\frac{1}{3}$ 

2/9

 $\frac{1}{2}$  $\frac{4}{1}$ 

12/25

42/50

Initial  
Consonant

Final Consonant

## Digraph

## Blend

## Short Vowel

$V_{ce}$

Vowel  
Team/  
diphthong

R-controller  
Nieuw

### Infections

Words  
Correct  
Total

Feature  
Total





# Don't Forget to Teach Spelling

- Spelling and writing are not mentioned in the “five essential components” model.
- So, is reading instruction enough to ensure that children learn these skills? (NO!)
- Does good spelling instruction enhance reading, vocabulary, and writing ability? (YES!)



# Summary

- Learning to spell is just as much a language-based skill as learning to read
- Reading and spelling rely on similar linguistic processes
- Phonological processing is a major factor in poor spelling
- Spelling is harder than word recognition, especially with regard to specific, complex, elusive linguistic elements
- Good spelling instruction will teach language structure directly and systematically at all levels
- AND will provide many opportunities for children to write, with corrective feedback.



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